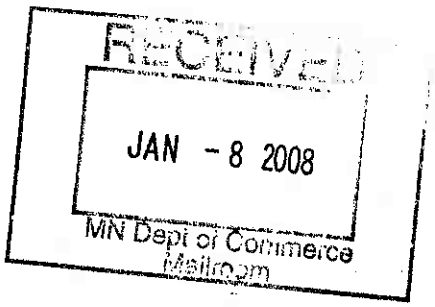
January 6, 2008



To: The Minnesota Public Utilities Commission
Ref: Excelsior Energy Mesaba IGCC Plant

From: Nathaniel Hart,
15 South Street
Morris, MN 56267

Thank you for the opportunity to comment on the environmental impact of the proposed Excelsior Energy Mesaba IGCC plant. I do so as a citizen of the State of Minnesota, having lived here for more than 50 years. I know the state well and have lived in various regions of Minnesota including Minneapolis, St. Paul, the Arrowhead, and Morris. I served my entire professional career as a university teacher here in Minnesota, and now, in retirement, I continue my life-long interest in the environment.

I am asking you to reject the permits for Mesaba IGCC plant on the following grounds:

1. As proposed, the Mesaba plant would be environmentally harmful. It will increase Minnesota's CO2 emissions at a time when we should be reducing them.

2. The Carbon Capture and Sequestration (CCS) technology, which the Mesaba plant is supposed to use, is not proven effective.

A. It is estimated that CCS consumes as much as 20% of the energy produced by an IGCC plant and will add 20-50% to the cost of the electricity.

B. Although CCS is being used in some places, it is not a proven practice. No one knows if sequestered CO2 will stay where it is put or what the effects of storage or leakage may be.

It is reported that CO2 can react with elements in the earth to create acids that might be harmful and could possibly contaminate aquifers.

CO2 escaping in quantity is known to be lethal and, of course, would defeat the purpose of sequestration with respect to global warming.

The Massachusetts Institute of Technology 2007 report "The Future of Coal" notes there are no standards for measuring or monitoring captured CO2 and no agreement on how long a time monitoring should be continued. Our general ignorance of the effectiveness and the consequences of CCS is born out by the testimony of Dr. Robert C. Burress, Research Geologist, Energy Resources Team, U.S. Geological Survey, U.S. Dept. of Interior, before the Subcommittee on Science, Technology, and Innovation, Senate Committee on Commerce, Science and Transportation Hearing on Carbon Sequestration Technologies, November 7, 2007.

The earth beneath us is not inert. Millions of microorganisms exist in complex relationships of which we humans have very little or no knowledge. Having already upset the ecological stability of life on earth, it would be an act of extraordinary and inexcusable hubris for us to precipitously expand our destructive dominion over subterranean regions any more than we already have with our extractive industries.

One of the leading experts on global warming, NASA's James Hansen, said in 2006, that we had just 10 years to reduce greenhouse gases to avert a global warming catastrophe. He stresses the need to phase out existing coal-fired power plants,

prohibit any increase in CO2 emissions, and reduce all fossil fuel emissions. The Mesaba plant violates these criteria.

Minnesota, however, is well positioned to successfully carry out a strategy embraced by our neighbors to the north, in Ontario: namely, to adopt a policy and develop a plan and timetable for phasing out all coal-fired plants in the state (or at least 70% of CO2 emissions). That would set an example for other states and be consistent with the positive leadership role for which Minnesota is known.

I enclose a copy of a newspaper article I wrote raising questions about CCS. While the norm for newspaper columns does not admit documentation, I can assure you that the details in the article are supported by reliable sources.

Respectfully yours,

Nathaniel Hart

Enclosure: "On This Earth: A site out of sight"

On This Earth: A site out of sight

Morris Sun Tribune Published Saturday, January 05, 2008

By Nathaniel Hart

The United States may be the last government in the world to acknowledge the fact of human-induced global warming, but the coal energy industry has come up with a solution to it: Too much CO2 being pumped into the atmosphere? Simple: From now on, just bury it!

For more than 200 years, mainly because of coal-fired energy sources, the industrialized nations of the world have released large amounts of CO2 into the atmosphere. Only now do we recognize the devastating consequences this practice has for life on earth.

But the coal energy industry, understandably eager to protect its investments, talks about "clean coal" and the possibility of capturing CO2 emissions and storing them deep in the earth or under the ocean or in saline aquifers or depleted oil- and gas-fields much as the nuclear industry once dreamed of safely storing nuclear waste underground.

The coal energy industry proposes that for the next 200 years, instead of sending CO2 into the atmosphere, we inject it into the earth using a technique called Carbon Capture and Storage or CCS.

If energy is produced by a process called coal gasification (IGCC), the CO2 can be captured before it enters the atmosphere. Subjected to high temperature and pressure, the captured CO2 becomes fluid and can be pumped to storage sites--huge cavities or porous and permeable mineral formations deep below the earth's surface. The sites, when full, will be "capped" or sealed and then monitored for leaks, presumably for eternity.

Carbon Capture and Storage is used now in at least three projects in different parts of the world. Engineers do know how to capture the CO2 and inject it below the earth's surface. But no one knows for certain if the CO2 will stay where it is put or what the effects of storage or leakage may be.

Will the CO2 migrate to the surface through crevices and fault lines? Will it seep into groundwater or deep fresh-water aquifers? Will it react with other minerals and organic compounds to create harm? What is the ecological role of saline aquifers and how will CO2 storage change it? What will be its effect on subterranean bacteria and microorganisms?

The sheer mass of CO2 is staggering, beyond human imagination. A single coal-fired electric plant may produce more than 13,000 tons of CO2 per day or millions of tons in one year. The U.S. emits 2.8 billion tons of CO2 annually. What will it mean to pump

even a fraction of this CO2 into the earth?

Recent scientific studies suggest that the natural processes of carbon absorption may already be slowing: Forests, grasslands, soil, and oceans may not be absorbing as much CO2 as scientists earlier had estimated. Nature's carbon repositories, not just the atmosphere, seem to be negatively influenced by the excess of CO2.

Because Carbon Capture and Storage (CCS) is not a proven technology and the cost is high, the coal industry has come up with the reassuring phrase "capture ready": Let us build coal gasification plants that are "capture ready," that will capture CO2 at some future time when we find a safe and economical way of doing it. Until then, the CO2 will spew into the atmosphere.

The public is not buying it.

Washington state, for example, recently refused to approve a "capture ready" power plant when the energy company admitted that CCS was neither technologically nor economically feasible. Two such plants in Florida and one in Arizona also have been cancelled.

In Minnesota, Excelsior Energy wants to build a "capture ready" coal-gasification plant on the Iron Range, but it is reported that two administrative law judges advised the Minnesota Public Utilities Commission against approval because the cost of the electricity would be too high and because a "capture ready" plant without actual capture provides no immediate environmental benefit. (Note: *The Minnesota Public Utilities Commission is not obliged to follow the administrative judges advice, but they are accepting public comment until Friday, Jan. 11, 2008. Written comments on the Excelsior Energy Mesaba plant's environmental impact can be sent to Bill Storm via email at:bill.storm@state.mn.us, or the Minnesota Department of Commerce, 85 7th Place, Suite 500, St. Paul, Minnesota 55101-2198.)

A coal-gasification plant can be built in three years, but perfected technology for using CCS remains at least 10 and perhaps 20 years into the future, too late to avert catastrophic global warming.

Far from being a practical solution to the serious and immediately present threatening consequences of global warming, CCS may be an invitation to disaster--prolonging our dependence on "dirty coal," perpetuating mountain top removal of coal in the east and strip mining in the west, diverting resources away from renewable energy, and delaying the necessary phase-out of coal-fired energy plants. CCS may just be an acronym for Corporate Coal Spin.

 A retired teacher, Nat Hart divides his time between the Minnesota prairie and the Oregon coast, observing and writing about the environment.